

PAUL SCHERRER INSTITUT



Bill Pedrini :: Quantum Technologies :: Paul Scherrer Institut

# The Cristallina project

SwissFEL performance workshop, 27.01.2021

# Agenda

- Status

1. Overview

**None**

Major achievements / Successes

**Too many**

Challenges

2. Timeplan

- Plan 2021

**Too far  
away**

Parallel operation

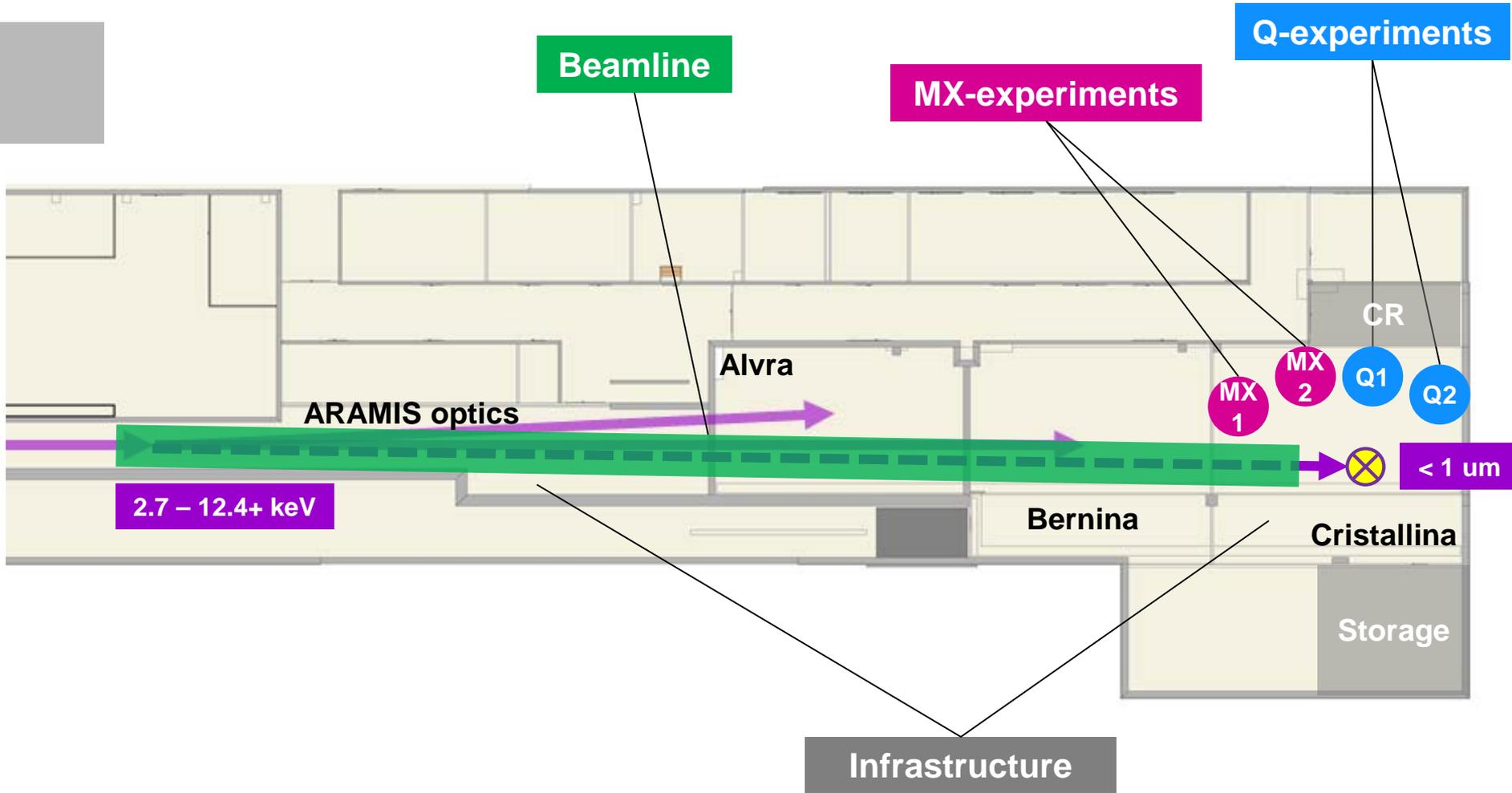
Reliable operation

3. Impact on ARAMIS



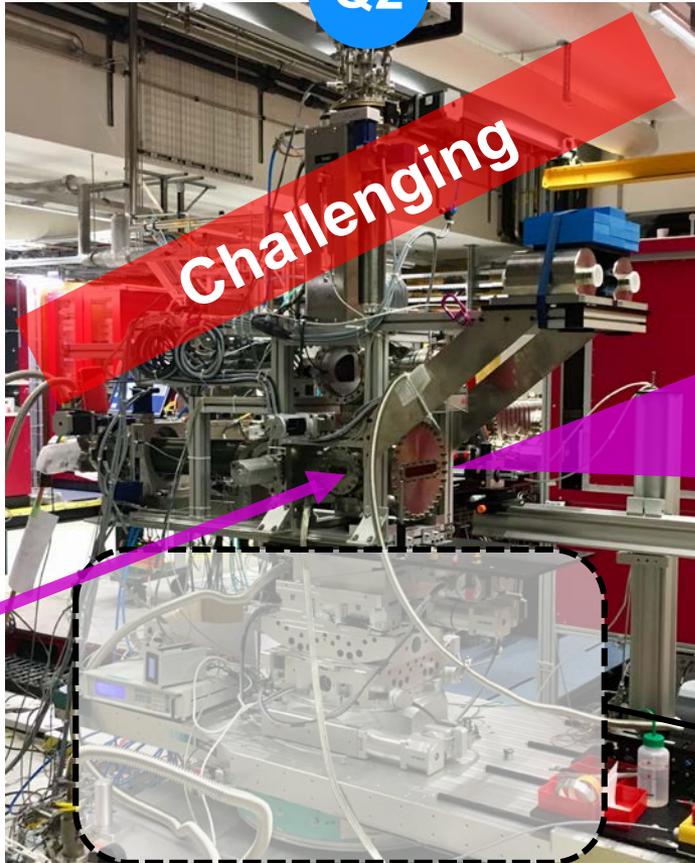
# 1. Overview

# The Cristallina project



# Cristallina-Q instruments

Q2



**Pulsed magnet system**

- Demonstrated at Bernina
- **> 47 T**
- < 4 K

Q1



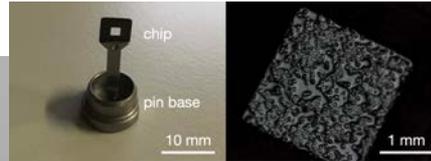
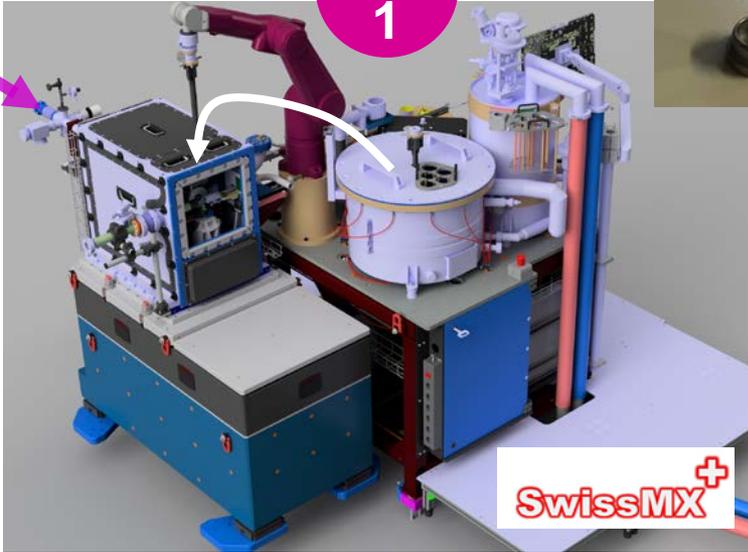
**ULT cryo-magnet system**

- Under commissioning in EH.050
- **< 1 K**
- 5.2 T vector magnet



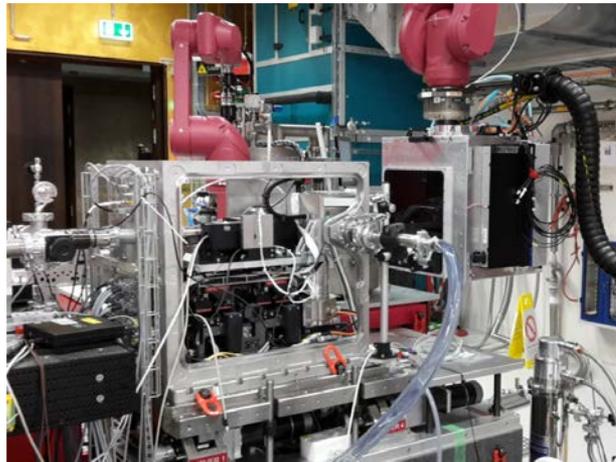
# Cristallina-MX instruments

**MX 1**

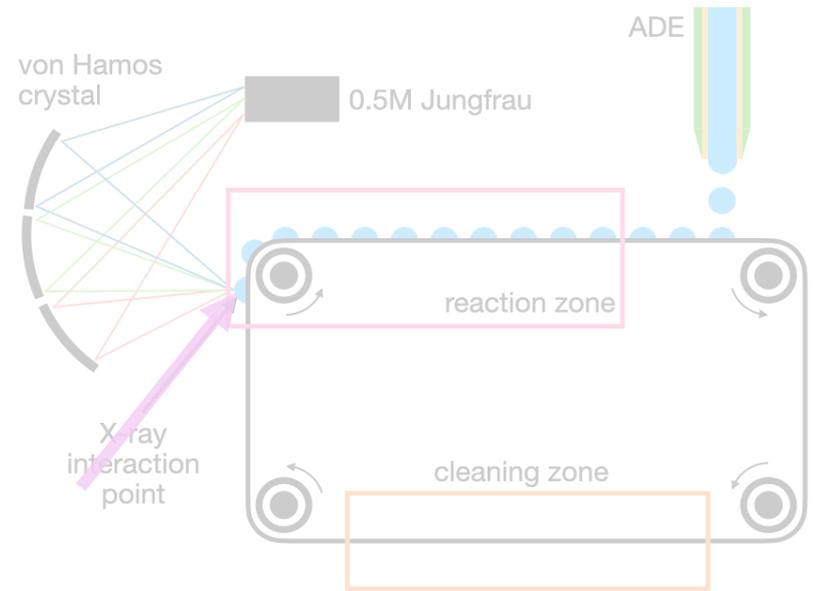


## Fixed-target protein crystallography

- Commissioned at Bernina (25 Hz)



**MX 2**



## Drop-on-demand sample delivery system

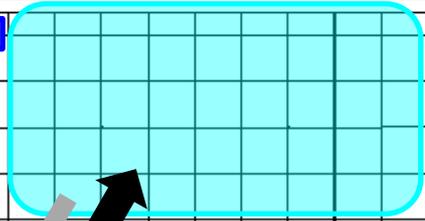
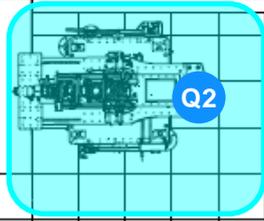
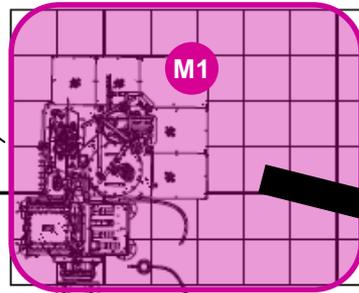
# Operation concept

Cr-MX  
Prep 1

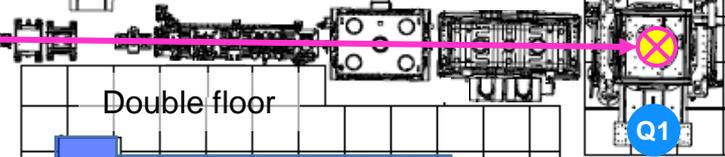
Control room

Cr-Q  
Prep1

Cr-Q  
Prep2



Granite floor



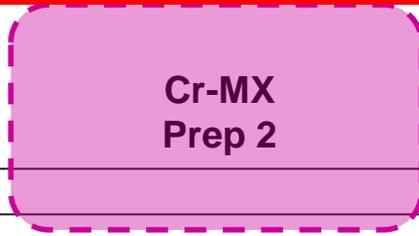
Double floor

Racks

Double floor

**PORTHOS wall**

EH. 057



Cr-MX  
Prep 2

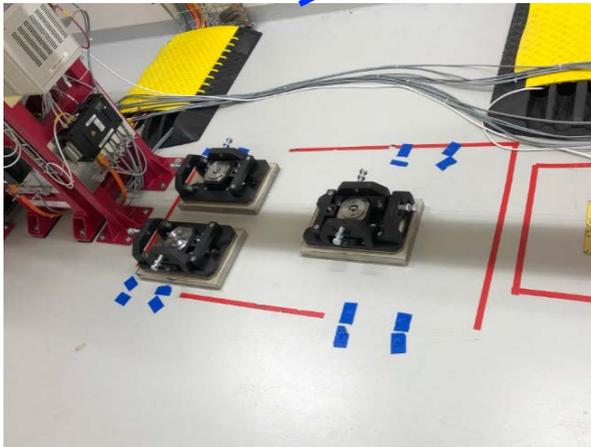
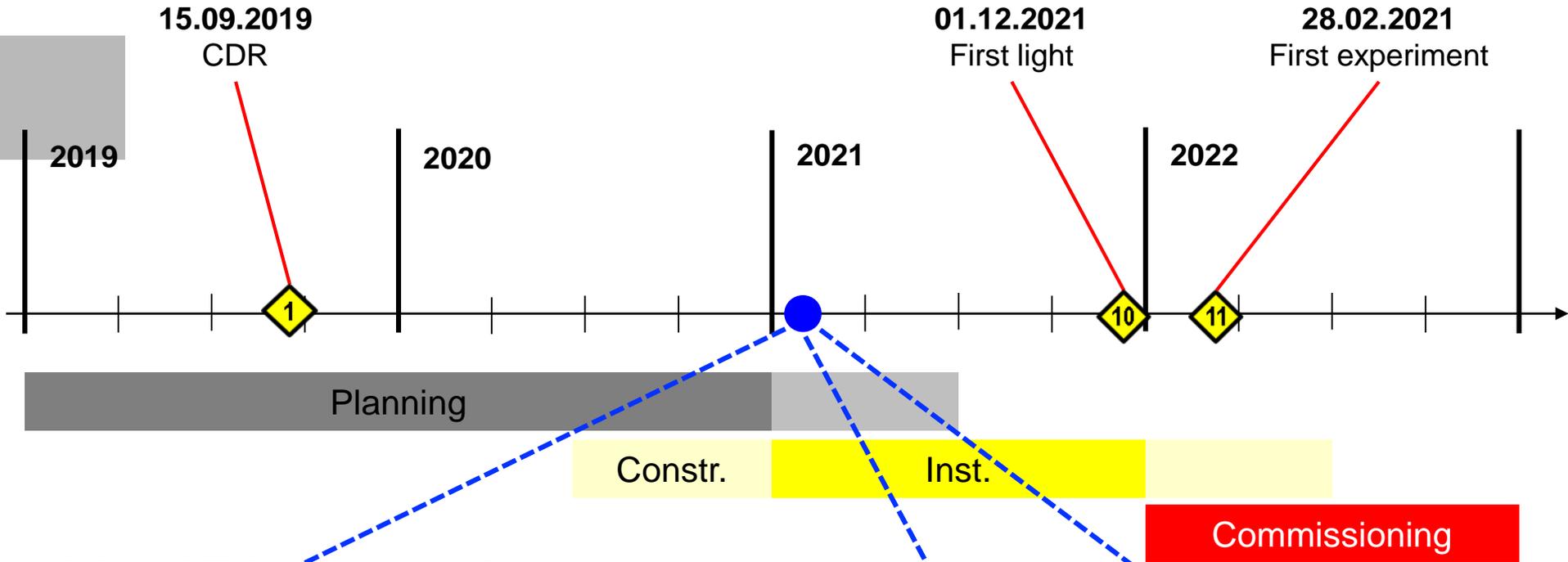


Main sample  
position

A solid grey rectangular bar is positioned on the left side of the slide, partially overlapping the section header.

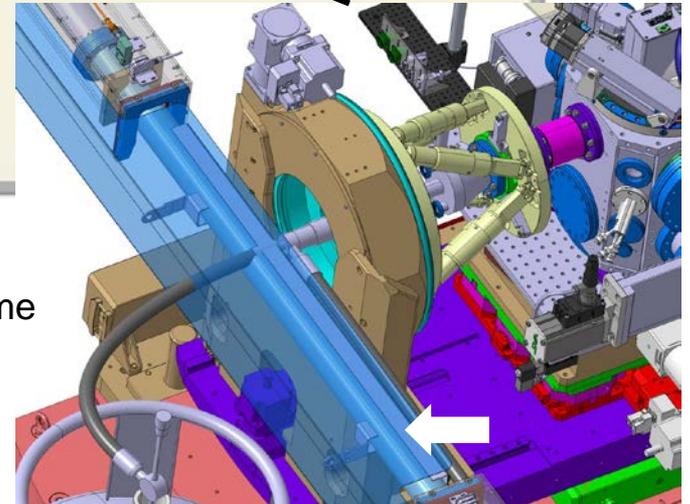
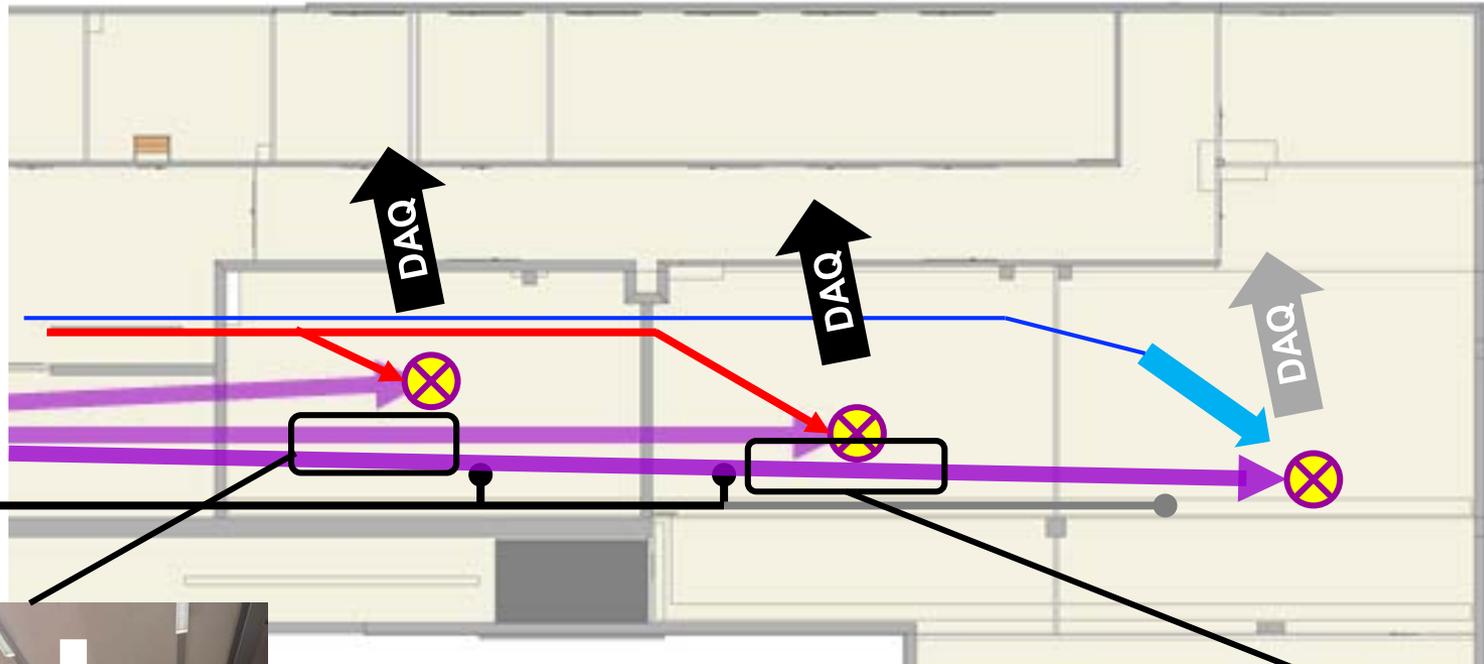
## **2.** **Timeplan**

# Timeplan (& current status)



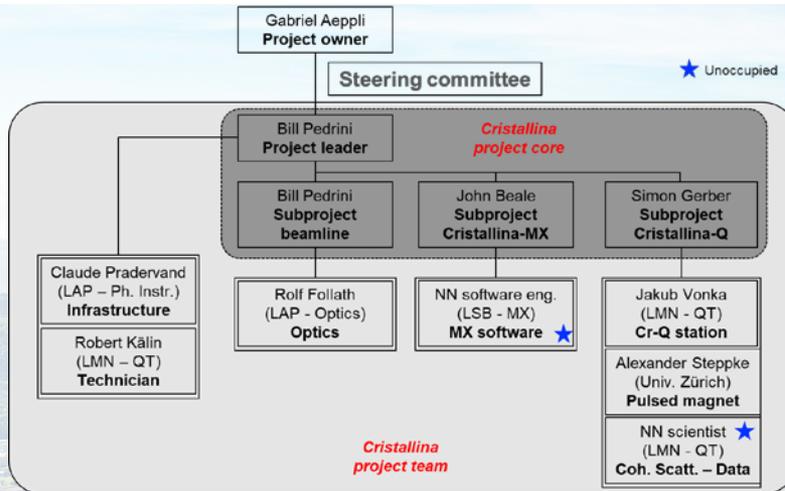
### **3.**

## **Impact on ARAMIS**



- Time and money for optimization
- Coordination in beamtime scheduling

# Acknowledgements



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Karel Stadler / Network hardware	Urs Vonderach Climatization system		Sven Reiche SwissFEL beam dynamics
Simon Ebner Network software / DAQ software			

PSI supporting groups (matrix)

... and all PSI collaborators that have been / will be involved in the project (59 people in the project communications distribution list)